

AMENDMENTS TO THE SPECIFICATION

Please replace the title of the application with the following title:

BIOINFORMATICALLY DETECTABLE GROUP OF ~~NOVEL~~ VIRAL REGULATORY GENES AND USES THEREOF

Please replace the second paragraph after the heading "Brief Description of Sequence Listing, Large Tables and Computer Program Listing" at page 2 with the following paragraph:

~~A. The Sequence Listing is filed on in an electronic medium in computer-readable form, attached to the present invention, and is hereby incorporated by reference. Said sequence listing is contained in a three files named SEQUENCE.TXT (63,744 KB, December 6, 2005) "SeqList1.txt" (24,076 KB), "SeqList2.txt" (24,078 KB), and "SeqList3.txt" (15,631 KB) all created on June 13, 2007.~~

Please replace the paragraph beginning on page 9, line 9, with the following paragraph:

Fig. 14B is a schematic representation of secondary folding of hairpins of the operon-like cluster of Fig. 14A. The hairpins have the sequences set forth as follows: N2 (SEQ ID NO: 424577), N3 (SEQ ID NO: 424578), MIRNA23 (SEQ ID NO: 424579), GAM22 (SEQ ID NO: 424580), GAM116 (SEQ ID NO: 424581), N116 (SEQ ID NO: 424582), N4 (SEQ ID NO: 424583), N0 (SEQ ID NO: 424584), N6 (SEQ ID NO: 424585), MIRNA24 (SEQ ID NO: 424586), and N7 (SEQ ID NO: 424587);

Please replace the paragraph beginning on page 9, line 16, with the following paragraph:

Fig. 15A is an annotated sequence of EST72223 (SEQ ID NO: 424572) comprising known human miRNA gene MIRNA98 and novel human gene GAM25, both detected by the gene detection system of the present invention. Additionally annotated in EST72223 are the MIRNA98 hairpin in bold (SEQ ID NO: 424573), the sequence of the mature miRNA of MIRNA98 in bold and underline (SEQ ID NO: 424574), the sequence of the GAM25 hairpin in bold (SEQ ID NO: 424575), and the sequence of the mature miRNA of GAM25 in bold and underline (SEQ ID NO: 424576); and

Please replace the paragraph beginning on page 9, line 23, with the following paragraph:

Fig. 16 present pictures of laboratory results demonstrating laboratory confirmation of 'dicing' of four novel bioinformatically detected HIV1 VGAMs into their corresponding mature genes, herein designated VGAM2032.2 (Fig. 16B), VGAM3249.1 (Fig.16C), VGAM507.2 (Fig.16D) and VGAM1016.2 (Fig.16E). The annotated sequences shown in Fig. 16A have the sequences set forth as follows: 5'UTR sequence (5' to 3') of HIV-1 (U5-R)(SEQ ID NO: 424588), nucleotides 1-57 of the HIV-1 sequence in bold (SEQ ID NO: 424589), nucleotides 2-23 of the HIV-1 sequence in bold underline (SEQ ID NO: 424590), nucleotides 30-77 of the HIV-1 sequence in bold (SEQ ID NO: 424591), and nucleotides 60-77 of the HIV-1 sequence in bold underline (SEQ ID NO: 424592). The annotated sequences shown in Fig. 16D have the sequences set forth as follows: TRANSCRIPT SEQUENCE (5' TO 3')(SEQ ID NO: 424593), sequence in bold (SEQ ID NO: 424594), and sequence in bold underline (SEQ ID NO: 424595). The annotated sequence shown in Fig. 16E have the sequences set forth as follows: TRANSCRIPT SEQUENCE (5' TO 3')(SEQ ID NO: 424596), sequence in bold (SEQ ID NO: 424597), and sequence in bold underline (SEQ ID NO: 424598).

Please replace the paragraph beginning on page 36, line 4, with the following paragraph:

For the "ligation" library a DNA (UPPERCASE)-RNA (lowercase) hybrid 5'-adapter (5'-TACTAATACGACTCACTaaa-3' Dharmacon # P-002046-01-05) (SEQ ID NO: 424599) was ligated to the 3'-adapted RNA, reverse transcribed with "EcoRI-RT" : (5'-GACTAGCTGGAATTCAAGGATGCGGTAAA-3') (SEQ ID NO: 424600), PCR amplified with two external primers essentially as in Elbashir et al 2001 except that primers were "EcoRI-RT" and "PstI Fwd" (5'-CAGCCAACGCTGCAGATACGACTCACTAAA-3') (SEQ ID NO: 424601). This PCR product was used as a template for a second round of PCR with one hemispecific and one external primer or with two hemispecific primers.

Please replace the paragraph beginning on page 36, line 25, with the following paragraph:

5'-AATTAACCCTCACTAAAGGCTGCAGGTGCAGGIGGGIIGGG IIGGGIIGN-3' (SEQ ID NO: 424602) where I stands for Inosine and N for any of the 4 possible deoxynucleotides, and with "EcoRI Nested" (5'-GGAATTCAAGGATGCGGTAA-3') (SEQ ID NO: 424603). This PCR product was used as a template for a second round of PCR with one hemispecific and one external primer or with two hemispecific primers.

Please replace the paragraph beginning on page 36, line 29, with the following paragraph:

Hemispecific primers were constructed for each predicted GAM/VGAM by an in-house program designed to choose about half of the 5' or 3' sequence of the GAM/VGAM corresponding to a T_m of about 30°-34°C constrained by an optimized 3' clamp, appended to the "cloning adapter sequence (for "One-tailed" libraries 5'-GGNNGGNNNG (SEQ ID NO: 424604) on the 5' end of the GAM/VGAM, or TTTAACCGCATC-3' (SEQ ID NO: 424605) on the 3' end of the GAM/VGAM. For "Ligation" libraries the same 3' adapter and 5'-CGACTCACTAAA on the 5' end) (SEQ ID NO: 424606). Consequently, a fully complementary primer of a T_m higher than 60°C was created covering only one half of the GAM/VGAM sequence permitting the unbiased elucidation by sequencing of the other half.

Please replace the paragraph beginning on page 41, line 18, with the following paragraph:

Transcript products were 705nt (EST72223), 102nt (MIRNA98 precursor), 125nt (GAM25 precursor) long. EST72223 was PCR amplified with T7-EST 72223 forward primer:

5'-TAATACGACTCACTATAGGCCCTTATTAGAGGATTCTGCT-3' (SEQ ID NO: 424607)

and T3-EST72223 reverse primer:

5'-AATTAACCCCTCACTAAAGGTTTTTTTTCTCTGAGACAGAGT-3' (SEQ ID NO: 424608).

MIRNA98 was PCR amplified using EST72223 as a template with T7MIRNA98 forward primer:

5'-TAATACGACTCACTATAGGGTGAGGTAGTAAGTTGTATTGTT-3' (SEQ ID NO: 424609).

and T3MIRNA98 reverse primer:

5'-AATTAACCCCTCACTAAAGGGAAGTAGTAAGTTGTATTAGTT-3' (SEQ ID NO: 424610).

GAM25 was PCR amplified using EST72223 as a template with GAM25 forward primer: 5'-GAGGCAGGAGAATTGCTTGA- 3' (SEQ ID NO: 424611) and T3-EST72223 reverse primer:

5'-AATTAACCCCTCACTAAAGGCCTGAGACAGAGCTTGTCTC-3' (SEQ ID NO: 424612).